ABSTRACT OF THE DISCLOSURE

A media access control (MAC) frame structure and a data communication method in a cable network are provided. According to the MAC frame structure and the data communication method in the cable network, it is possible to reduce unnecessary consumption of resources, caused by the delay of time for transmitting signaling packets when dynamic service change (DSC) signaling is performed in order to initialize payload header suppression, to thus improve the efficiency of use of the resources. The MAC frame structure in the cable network includes a MAC header having various extended header types according to a service flow between a sender and a receiver and a payload data unit (PDU) including parameters according to a payload header suppression (PHS) rule. The data communication method in the cable network includes the steps of the sender transmitting a first EH_TYPE packet according to the change in the PHS rule to the receiver when the PHS rule changes, in the case where communication is performed between the sender and the receiver, checking whether there exists an error in the first EH_TYPE packet, determining whether to apply a new PHS rule on the basis of the first EH_TYPE, and transmitting a second EH_TYPE packet to the sender, terminating transmission of a common PHS packet, setting a packet type as a third EH_TYPE, suppressing a packet into a new channel, and transmitting the packet when the second EH_TYPE packet is a success message and setting the packet type as a common MAC packet and transmitting the packet without performing suppression when the second EH_TYPE packet is a failure message.